

US009636264B2

# (12) United States Patent

Suzuki et al.

(10) Patent No.: US 9,636,264 B2

(45) **Date of Patent:** May 2, 2017

#### (54) ABSORBENT ARTICLE

(75) Inventors: Migaku Suzuki, Tokyo (JP); Yoshio

Hirai, Tokyo (JP)

(73) Assignee: **DAIO PAPER CORPORATION**,

Shikokuchuo-shi (JP)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 22 days.

(21) Appl. No.: 14/363,032

(22) PCT Filed: Mar. 12, 2012

(86) PCT No.: **PCT/JP2012/056297** 

§ 371 (c)(1),

(2), (4) Date: Jun. 5, 2014

(87) PCT Pub. No.: WO2013/088751

PCT Pub. Date: Jun. 20, 2013

(65) **Prior Publication Data** 

US 2015/0005731 A1 Jan. 1, 2015

(30) Foreign Application Priority Data

Dec. 13, 2011 (JP) ...... 2011-271939

(51) Int. Cl.

**A61F 13/49** (2006.01) **A61F 13/491** (2006.01)

(Continued)

(52) U.S. Cl.

CPC .. A61F 13/49413 (2013.01); A61F 13/49446 (2013.01); A61F 13/511 (2013.01);

(Continued)

(58) Field of Classification Search

CPC ....... A61F 13/49406; A61F 13/49413; A61F 13/4942; A61F 2013/49433;

(Continued)

# (56) References Cited

#### U.S. PATENT DOCUMENTS

4,892,528 A \* 1/1990 Suzuki et al. ............ 604/385.27 6,152,908 A \* 11/2000 Widlund et al. ......... 604/385.19 (Continued)

#### FOREIGN PATENT DOCUMENTS

AU 675943 2/1997 GB 2 287 393 A 9/1995 (Continued)

# OTHER PUBLICATIONS

Office Action issued Japanese Patent Application No. 2012-513397 dated Jun. 19, 2012 (with translation).

(Continued)

Primary Examiner — Peter S Vasat (74) Attorney, Agent, or Firm — Oliff PLC

## (57) ABSTRACT

An absorbent article has a basic functionality of a skin contact sheet present and configured on the surface of an absorber such that it rises therefrom, in which no positional displacement occurs at a crotch part and which effectively avoids contact between a wearer's skin and urine/feces. The absorbent article has: a leak preventer in sheet form; an absorber arranged above the leak preventer and capable of absorbing a bodily fluid in at least one layer; a skin contact member arranged above the absorber, between a front part of the leak preventer and a rear part of the leak preventer, and that makes contact with a wearer's skin and is spaced apart from the absorber at a time of use; and a connecting unit that couples a part of the skin contact member corresponding to a crotch part of the wearer with the absorber at the time of

### 20 Claims, 14 Drawing Sheets



